In the Specification:

Please amend paragraph [0035] as follows:

[0035] Figure 1 shows a block diagram of one version of an electrical transducer 1 which is shown as a whole only schematically in Figure 7. The electrical transducer 1 works using the two-wire principle, and has a sensor 2 for acquiring the quantity which is to be measured, and an analog end stage 3 connected downstream of the sensor 2. The sensor 2, besides the actual sensor element which converts the measured quantity into a proportional electrical quantity, has a signal conditioning unit. The signal conditioning unit generally contains a linearizer so that the output signal U_P at the output ~~2~~ of the sensor 2 is linearly proportional to the measured quantity, for example, a pressure value. In the analog end stage 3 which can be implemented, for example, by a power source, the output signal U_P of the sensor 2 is converted into an impressed output current I_A with a magnitude which is indicative of the quantity which is to be measured.

Please amend paragraph [0053] as follows:

[0053] Figures 6a and 6b show a block diagram and a circuit diagram of the supply principle of the electric transducer 1. In two-wire operation of the electrical transducer 1, only the two input terminals 22 and 23 are connected, the positive supply voltage U_{B+} being present at the first input terminal 22~~, and the negative supply voltage U_B being present at the second input terminal 23~~. The second input terminal 23 is connected to the output of the analog end stage 3 so that the impressed output current I_A from the first input terminal 22 flows via the electrical transducer 1 to the second input terminal 23. In addition, the electrical transducer 1 has a third input terminal 24, at which the negative supply voltage U_B is present, and a fourth input terminal 25. All four input terminals 22 to 25 are combined in a plug connector 26 which is connected to the power supply 27 of the electrical transducer 1.

Please amend paragraph [0055] as follows:

[0055] In two-wire operation of the electrical transducer 1, the main current path between the first input terminal 22 and the second input terminal 23 consists of a series connection of a Zener diode 29 and the analog end stage 3. The analog end stage 3 shown in Figure 6b as the power source regulates the output current I_A to a value of 4 to 20 mA. All

the electronics are connected in parallel to the Zener diode 29, i.e., both the analog scaling unit 8 and also the processor circuit 4 are supplied with internal operating voltage by the voltage drop on the Zener diode 29. While the analog scaling unit 8 is directly connected to the anode and the cathode of the Zener diode 29, the processor circuit 4 is connected via its own circuitry to the Zener diode 29. This circuitry has a voltage regulator 30 ~~39~~ which is connected to the anode of the Zener diode 29 via a band-gap diode 31 and the base-emitter segment of a pnp transistor 32. The circuitry of the processor circuit 4 moreover has another storage capacitor 33 and a voltage comparator 34.

Please amend paragraph [0056] as follows:

[0056] In two-wire operation of the electrical transducer 1, the power required by the processor circuit 4 in the awake mode is made available by charging the storage capacitor 33 which has generous dimensions. The voltage comparator 34 monitors the charging state of the storage ~~capacity~~ capacitor 33 and when it falls below the necessary bias, forces the downstream voltage regulator 30 to set its output voltage U_{out} to zero via its shut-down input 35 and thus to cut off the current in the circuitry of the processor circuit 4. The voltage regulator 30 is only isolated again when the charging voltage of the storage capacitor 33 rises above the bias set by the voltage comparator and thus makes ready enough current for the following active phase, i.e., following the awake mode, to the processor circuit 4.

Please amend paragraph [0058] as follows:

[0058] Figure 7 shows a schematic of the connection of an electrical transducer 1 to a programming device 37 ~~35~~. A display device can also be integrated into the programming device 37 so that not only data can be input via the programming device 37 into the electrical transducer 1, but subsequently data from the electrical transducer 1 can be read out and displayed on the programming device 37. Exchange of data takes place between the programming device 37 and the electrical transducer 1 via the fourth input terminal 25 of the electrical transducer 1 and the corresponding output terminal of the programming device 37. The fourth input terminal 25 is connected for this purpose via a serial interface 38 to the processor circuit 4. So that the processor circuit 4 of the electrical transducer 1 can remain permanently in the awake mode during the programming and scaling process, the required

operating voltage is made available via the programming device 37 on the first input terminal 22 and on the third input terminal 24 of the electrical transducer 1.